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EXAMINER
BURD, KEVIN MICHAEL

ART UNIT	PAPER NUMBER
2632	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)	
Office Action Summary	09/772,176	PROCTOR, JAMES A.	
	Examiner	**Art Unit**	
	Kevin M. Burd	2632	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>10 April 2012</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5) ☒ Claim(s) <u>1,2,5-14,16,17,19,21,22,25-36,39 and 42</u> is/are pending in the application.

    5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☒ Claim(s) <u>1,2,5-14,16,17,19,21,22,25-36,39 and 42</u> is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined <u>allowable</u>, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10) ☐ The specification is objected to by the Examiner.

11) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

4) ☐ Other: _____.

1.   This office action, in response to the request for continued examination and

amendment filed 4/10/2012, is a non-final office action.

Continued Examination Under 37 CFR 1.114

2.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

4/10/2012 has been entered.

Response to Arguments

3.   Applicant states the previously cited prior art does not disclose the recited

limitations of the amended claims. The examiner disagrees for the reasons stated

below. The rejections of the pending claims are stated below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by
another filed in the United States before the invention by the applicant for patent or (2) a patent
granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section
351(a) shall have the effects for purposes of this subsection of an application filed in the United States
only if the international application designated the United States and was published under Article 21(2)
of such treaty in the English language.

4.   Claims 1, 2, 14, 21, 22, 34 and 42 are rejected under 35 U.S.C. 102(e) as being

anticipated by Nakamura et al (US 6,408,189).

Regarding claim 1, Nakamura discloses a method for adapting to changes

affecting a wireless signal **(column 5, lines 64 to column 6, line 7: the moving speed**

of the mobile station is detected based on the variance of the phase errors in

phase compensation of the received signal.) the method comprising:

Determining whether a measurement of a metric of a modulated signal attribute is an

amplitude of the wireless signal, frequency of the wireless signal, or phase of the

wireless signal **(figure 2: the phase errors are determined from the received signal.**

This measurement of the metric is a phase of the wireless signal.);

instantaneously detecting motion of a communication device associated with a signal

path over which the wireless signal is transmitted based on the determined

measurement **(figure 2 and column 5, lines 64 to column 6, line 7: the moving**

speed of the mobile station is detected based on the variance of the phase errors

in phase compensation of the received signal.); and

selecting a parameter adjustment, based on the instantaneously detected motion

(figure 2 and column 5, lines 64 to column 6, line 7: the phase errors based on the

detected moving speed is used to adaptively control the transversal filter 60.);

and

performing the parameter adjustment **(figure 2: the filter is adjusted.).**

Regarding claim 2, Nakamura discloses the detecting is performed by a mobile

station **(figure 8, block 300).**

Regarding claim 14, Nakamura discloses the detecting includes: comparing the

metric to a threshold level **(figures 2 and 3: the phase error signal is input to the**

filter control. The error signal will provide a corresponding adjustment to the filter

coefficients.).

Regarding claim 21, Nakamura discloses an apparatus for adapting to changes

affecting a wireless signal **(column 5, lines 64 to column 6, line 7: the moving speed**

of the mobile station is detected based on the variance of the phase errors in

phase compensation of the received signal.) the apparatus comprising:

A processing unit configured to determine whether a measurement of a metric of a

modulated signal attribute is an amplitude of the wireless signal, frequency of the

wireless signal, or phase of the wireless signal **(figure 2: the phase errors are**

determined from the received signal. This measurement of the metric is a phase

of the wireless signal.) and to instantaneously detecting motion of a communication

device associated with a signal path over which the wireless signal is transmitted based

on the determined measurement **(figure 2 and column 5, lines 64 to column 6, line 7:**

the moving speed of the mobile station is detected based on the variance of the

phase errors in phase compensation of the received signal.); and

A compensator configured to perform a signaling parameter adjustment, responsive to the motion instantaneously detected by the processing unit **(figure 2 and column 5, lines 64 to column 6, line 7: the phase errors based on the detected moving speed is used to adaptively control the transversal filter 60.).**

Regarding claim 22, Nakamura discloses the apparatus configured as a mobile station **(figure 8, block 300).**

Regarding claim 42, Nakamura discloses a non-transitory computer readable storage medium containing a set of instructions for a general purpose computer, the set of instructions comprising:

A signal adaptation code segment configured to detect motion using a comparison threshold level **(figures 2 and 3: the phase error signal is input to the filter control. The error signal will provide a corresponding adjustment to the filter coefficients.)** after determining whether a measurement of a metric of a modulated signal attribute is an amplitude of the wireless signal, frequency of the wireless signal, or phase of the wireless signal **(figure 2: the phase errors are determined from the received signal. This measurement of the metric is a phase of the wireless signal.)**;

A detection code segment configured to instantaneously detecting motion of a communication device associated with a signal path over which the wireless signal is transmitted based on the determined measurement **(figure 2 and column 5, lines 64 to column 6, line 7: the moving speed of the mobile station is detected based on**

the variance of the phase errors in phase compensation of the received signal.); and

An adjusting code segment configured to perform a signaling parameter adjustment, responsive to the motion detected by the detecting code segment (figure 2 and column 5, lines 64 to column 6, line 7: the phase errors based on the detected moving speed is used to adaptively control the transversal filter 60.).

5.   Claims 1, 21 and 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Tiedemann, JR. et al (US 2002/0126739).

        Regarding claim 1, Tiedemann discloses a method for adapting to changes affecting a wireless signal (paragraph 0094: Demodulator 52 can also estimate the velocity of remote station 6 by estimating the reverse link frequency error using demodulation techniques that are well known in the art.) the method comprising:

Determining whether a measurement of a metric of a modulated signal attribute is an amplitude of the wireless signal, frequency of the wireless signal, or phase of the wireless signal (paragraph 0094: Demodulator 52 can also estimate the velocity of remote station 6 by estimating the reverse link frequency error using demodulation techniques that are well known in the art. The frequency error corresponds to the frequency of the wireless signal.);

instantaneously detecting motion of a communication device associated with a signal
path over which the wireless signal is transmitted based on the determined
measurement **(paragraph 0094: thus, demodulator 52 can provide velocity and
multipath estimates to controller 40 which then uses these information to
determine the gain increase and decrease and the step size.)** and

selecting a parameter adjustment, based on the instantaneously detected motion
**(paragraph 0094: thus, demodulator 52 can provide velocity and multipath
estimates to controller 40 which then uses these information to determine the
gain increase and decrease and the step size.)** and

performing the parameter adjustment **(paragraph 0094: thus, demodulator 52 can
provide velocity and multipath estimates to controller 40 which then uses these
information to determine the gain increase and decrease and the step size.).**

Regarding claim 21, Tiedemann discloses an apparatus for adapting to changes
affecting a wireless signal **(paragraph 0094: Demodulator 52 can also estimate the
velocity of remote station 6 by estimating the reverse link frequency error using
demodulation techniques that are well known in the art.)** the apparatus comprising:

A processing unit configured to determine whether a measurement of a metric of a
modulated signal attribute is an amplitude of the wireless signal, frequency of the
wireless signal, or phase of the wireless signal **(paragraph 0094: Demodulator 52 can
also estimate the velocity of remote station 6 by estimating the reverse link**

**frequency error using demodulation techniques that are well known in the art.
The frequency error corresponds to the frequency of the wireless signal.**) and to
instantaneously detecting motion of a communication device associated with a signal
path over which the wireless signal is transmitted based on the determined
measurement **(paragraph 0094: thus, demodulator 52 can provide velocity and
multipath estimates to controller 40 which then uses these information to
determine the gain increase and decrease and the step size.)**; and

A compensator configured to perform a signaling parameter adjustment, responsive to
the motion instantaneously detected by the processing unit **(paragraph 0094: thus,
demodulator 52 can provide velocity and multipath estimates to controller 40
which then uses these information to determine the gain increase and decrease
and the step size.).**

        Regarding claim 42, Tiedemann discloses a non-transitory computer readable
storage medium containing a set of instructions for a general purpose computer, the set
of instructions comprising:

A signal adaptation code segment configured to detect motion using a comparison
threshold level **(paragraph 0094: Demodulator 52 can also estimate the velocity of
remote station 6 by estimating the reverse link frequency error using
demodulation techniques that are well known in the art.)** after determining whether
a measurement of a metric of a modulated signal attribute is an amplitude of the
wireless signal, frequency of the wireless signal, or phase of the wireless signal

(paragraph 0094: Demodulator 52 can also estimate the velocity of remote station 6 by estimating the reverse link frequency error using demodulation techniques that are well known in the art.);

A detection code segment configured to instantaneously detecting motion of a communication device associated with a signal path over which the wireless signal is transmitted based on the determined measurement **(paragraph 0094: thus, demodulator 52 can provide velocity and multipath estimates to controller 40 which then uses these information to determine the gain increase and decrease and the step size.);** and

An adjusting code segment configured to perform a signaling parameter adjustment, responsive to the motion detected by the detecting code segment **(paragraph 0094: thus, demodulator 52 can provide velocity and multipath estimates to controller 40 which then uses these information to determine the gain increase and decrease and the step size.).**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1, 2, 14, 19, 21, 22, 34, 39 and 42 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Yamashita (US 6,256,500) in view of Uchida (US 6,618,596).

        Regarding claim 1, Yamashita discloses a method for adapting to changes

affecting a wireless signal **(column 4, lines 24-32: Each mobile station receives a**

control channel, detects the fading state thereof and determines that the mobile

station is moving at a high speed or a low speed.), the method comprising:

Determining whether a measurement of a metric of a modulated signal attribute is an

amplitude of the wireless signal, frequency of the wireless signal, or phase of the

wireless signal **(column 4, lines 24-32: Each mobile station receives a control**

channel, detects the fading state thereof and determines that the mobile station is

moving at a high speed or a low speed. Column 5, lines 60-64: an RSSI is

determined from the control channel. A fading rate corresponds to the RSSI. The

RSSI and fading rate correspond to the amplitude of the wireless signal.

Therefore, the method determines a measurement of the metric, field intensity of

the received signal, which is an amplitude of the received signal.),

instantaneously detecting motion of a communication device associated with a signal

path over which the wireless signal is transmitted based on the determined

measurement **(column 4, lines 24-32: Each mobile station receives a control**

channel, detects the fading state thereof and determines that the mobile station is

moving at a high speed or a low speed. Column 5, lines 60-64: an RSSI is

determined from the control channel. A fading rate corresponds to the RSSI.

Column 6, lines 13-18: The rate is used for determining whether or not the mobile station is moving at a high speed.).

Yamashita does not disclose selecting a parameter adjustment, based on the instantaneously detected motion and performing the parameter adjustment. Yamashita discloses the calculated speed can decrease the number of handoffs and effectively use the available channels (column 8, lines 28-33).

Uchida discloses a mobile communication terminal that measures a moving speed of the mobile and changes a data transfer rate in accordance with the moving speed of the mobile (claim 1). The moving speed of the mobile is measured and stored (column 4, lines 41-56). The current moving speed is input to the moving speed maximum data transfer rate correspondence table as shown in figure 2. A lower one of the desired data transfer rate and maximum data transfer rate is selected (column 5, lines 3-10) and the selected transfer rate is input to an origination request message in the signal format shown in figure 3 (column 5, lines 11-15). The base station receives the origination request message supplied from the mobile terminal and communicates with the mobile terminal at the data transfer rate written in the data transfer rate designation field (column 5, lines 20-23). Therefore, Uchida discloses selecting a parameter adjustment, based on the instantaneously detected motion (**column 5, lines 3-10: A lower one of the desired data transfer rate and maximum data transfer rate is selected)** and performing the parameter adjustment (**column 5, lines 20-23: The base station receives the origination request message supplied from the**

mobile terminal and communicates with the mobile terminal at the data transfer

rate written in the data transfer rate designation field).

It would have been obvious for one of ordinary skill in the art at the time of the

invention to provide the parameter selection and adjustment of Uchida into the method

of Yamashita. Uchida discloses the system can perform stable communication by

changing the data transfer rate in accordance with the moving speed of a mobile

terminal (column 1, lines 51-57). This will improve the efficiency of the communication

method.

Regarding claim 2, Yamashita discloses the detecting is performed by a mobile

station **(figure 2a)**.

Regarding claim 14, Yamashita discloses the detecting includes: comparing the

metric to a threshold level **(column 5, line 51 to column 6, line 13: the lengths of the**

fluctuation periods are compared to determine if the fading rates are large or

small.).

Regarding claim 19, the method of the combination discloses the selecting the

parameter adjustment includes selecting to reduce at least one of the FEC coding rate,

or the number of modulation symbols, to a minimum level while maintaining the signal

path **(by lowering the data transfer rate, the number of symbols transmitted will be**

reduced.).

Regarding claim 21, Yamashita discloses an apparatus for adapting to changes

affecting a wireless signal **(column 4, lines 24-32: Each mobile station receives a**

control channel, detects the fading state thereof and determines that the mobile station is moving at a high speed or a low speed.), the apparatus, comprising:

a processing unit configured to determine whether a measurement of a metric of a modulated signal attribute is an amplitude of the wireless signal, frequency of the wireless signal, or phase of the wireless signal **(column 4, lines 24-32: Each mobile station receives a control channel, detects the fading state thereof and determines that the mobile station is moving at a high speed or a low speed. Column 5, lines 60-64: an RSSI is determined from the control channel. A fading rate corresponds to the RSSI. The RSSI and fading rate correspond to the amplitude of the wireless signal. Therefore, the method determines a measurement of the metric, field intensity of the received signal, which is an amplitude of the received signal.)**, and to instantaneously detect motion of a communication device associated with a signal path over which the wireless signal is transmitted based on the determined measurement **(column 4, lines 24-32: Each mobile station receives a control channel, detects the fading state thereof and determines that the mobile station is moving at a high speed or a low speed. Column 5, lines 60-64: an RSSI is determined from the control channel. A fading rate corresponds to the RSSI. Column 6, lines 13-18: The rate is used for determining whether or not the mobile station is moving at a high speed.).**

Yamashita does not disclose a compensator configured to perform a signaling parameter adjustment, responsive to the motion instantaneously detected by the

processing unit. Yamashita discloses the calculated speed can decrease the number of handoffs and effectively use the available channels (column 8, lines 28-33).

Uchida discloses a mobile communication terminal that measures a moving speed of the mobile and changes a data transfer rate in accordance with the moving speed of the mobile (claim 1). The moving speed of the mobile is measured and stored (column 4, lines 41-56). The current moving speed is input to the moving speed maximum data transfer rate correspondence table as shown in figure 2. A lower one of the desired data transfer rate and maximum data transfer rate is selected (column 5, lines 3-10) and the selected transfer rate is input to an origination request message in the signal format shown in figure 3 (column 5, lines 11-15). The base station receives the origination request message supplied from the mobile terminal and communicates with the mobile terminal at the data transfer rate written in the data transfer rate designation field (column 5, lines 20-23). Therefore, Uchida discloses a compensator configured to perform a signaling parameter adjustment, responsive to the motion instantaneously detected by the processing unit **(column 5, lines 3-10: A lower one of the desired data transfer rate and maximum data transfer rate is selected. Column 5, lines 20-23: The base station receives the origination request message supplied from the mobile terminal and communicates with the mobile terminal at the data transfer rate written in the data transfer rate designation field)**.

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the parameter selection and adjustment of Uchida into the method

of Yamashita. Uchida discloses the system can perform stable communication by changing the data transfer rate in accordance with the moving speed of a mobile terminal (column 1, lines 51-57). This will improve the efficiency of the communication method.

Regarding claim 22, Yamashita discloses the apparatus configured as a mobile station **(figure 2a)**.

Regarding claim 34, Yamashita discloses the processing unit is configured to detect motion using a comparison threshold level **(column 5, line 51 to column 6, line 13: the lengths of the fluctuation periods are compared to determine if the fading rates are large or small.).**

Regarding claim 39, the method of the combination discloses compensator is configured to reduce at least one of the FEC coding rate, or the number of modulation symbols, to a minimum level while maintaining the signal path **(by lowering the data transfer rate, the number of symbols transmitted will be reduced.).**

Regarding claim 42, Yamashita discloses a non-transitory computer-readable storage medium containing a set of instructions for a general purpose computer, the set of instructions comprising:

a signal adaptation code segment configured to cause a processor to control a signaling path to adapt to changes affecting the signaling path **(column 4, lines 24-32: Each mobile station receives a control channel, detects the fading state thereof and determines that the mobile station is moving at a high speed or a low speed.),**

after determining whether a measurement of a metric of a modulated signal attribute

comprised of at least one of amplitude of the wireless signal, frequency of the wireless signal, or phase of the wireless signal **(column 4, lines 24-32: Each mobile station receives a control channel, detects the fading state thereof and determines that the mobile station is moving at a high speed or a low speed. Column 5, lines 60-64: an RSSI is determined from the control channel. A fading rate corresponds to the RSSI. The RSSI and fading rate correspond to the amplitude of the wireless signal. Therefore, the method determines a measurement of the metric, field intensity of the received signal, which is an amplitude of the received signal.)**;

a detection code segment configured to instantaneously detect motion of a communication device associated with a signal path over which the wireless signal is transmitted based on the determined measurement **(column 4, lines 24-32: Each mobile station receives a control channel, detects the fading state thereof and determines that the mobile station is moving at a high speed or a low speed. Column 5, lines 60-64: an RSSI is determined from the control channel. A fading rate corresponds to the RSSI. Column 6, lines 13-18: The rate is used for determining whether or not the mobile station is moving at a high speed.).**

Yamashita does not disclose an adjusting code segment configured to perform a signaling parameter adjustment, responsive to the motion detected by the detecting code segment. Yamashita discloses the calculated speed can decrease the number of handoffs and effectively use the available channels (column 8, lines 28-33).

Uchida discloses a mobile communication terminal that measures a moving speed of the mobile and changes a data transfer rate in accordance with the moving speed of the mobile (claim 1). The moving speed of the mobile is measured and stored (column 4, lines 41-56). The current moving speed is input to the moving speed maximum data transfer rate correspondence table as shown in figure 2. A lower one of the desired data transfer rate and maximum data transfer rate is selected (column 5, lines 3-10) and the selected transfer rate is input to an origination request message in the signal format shown in figure 3 (column 5, lines 11-15). The base station receives the origination request message supplied from the mobile terminal and communicates with the mobile terminal at the data transfer rate written in the data transfer rate designation field (column 5, lines 20-23). Therefore, Uchida discloses an adjustment code segment configured to perform a signaling parameter adjustment, responsive to the motion instantaneously detected by the processing unit **(column 5, lines 3-10: A lower one of the desired data transfer rate and maximum data transfer rate is selected. Column 5, lines 20-23: The base station receives the origination request message supplied from the mobile terminal and communicates with the mobile terminal at the data transfer rate written in the data transfer rate designation field)**.

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the parameter selection and adjustment of Uchida into the method of Yamashita. Uchida discloses the system can perform stable communication by changing the data transfer rate in accordance with the moving speed of a mobile

terminal (column 1, lines 51-57). This will improve the efficiency of the communication

method.

5.   Claims 5-7 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Yamashita (US 6,256,500) in view of Uchida (US 6,618,596) further in view of

Watanabe (US 2001/0041584).

        Regarding claim 5, the method of the combination of Yamashita and Uchida

discloses the method stated above. The combination does not disclose an automatic

gain control loop is found in the receiver. Watanabe discloses a CDMA receiver that

includes the AGC amplifier 37A in figure 1. The AGC amplifier is provided for amplifying

the received signal to a desired signal level, in which its gain may automatically be

controlled to optimum so that the received power may become as minimal as necessary

depending on the distance from the base station (paragraph 0066). Therefore,

Watanabe discloses detecting is based on a signal in an AGC loop **(figure 1 and

paragraph 0066: the AGC amplifier is provided for amplifying the received IF

signal passing through the BPF 36A to a desired signal level, in which the gain

may automatically by controlled to optimum so that its received power may

become as minimal possible as necessary depending on the distance from the

base station.).** It would have been obvious for one of ordinary skill in the art at the time

of the invention to combine the AGC amplifier of Watanabe into the receiver and

method of the combination of Uchida and Yamashita. The receiver will increase the

received signal level as the distance between the receiver and the base station

increases so the signal can be received and processed correctly. This variable gain

control will further minimize errors in the received signal (paragraph 0066).

Regarding claim 6, Watanabe discloses the detecting is a function of a statistic of

the signal in the AGC loop **(figure 1 and paragraph 0066: the AGC amplifier is**

provided for amplifying the received IF signal passing through the BPF 36A to a

desired signal level, in which the gain may automatically by controlled to

optimum so that its received power may become as minimal possible as

necessary depending on the distance from the base station.).

Regarding claim 7, Watanabe discloses the statistic that is used is variance

(figure 1 and paragraph 0066: the AGC amplifier is provided for amplifying the

received IF signal passing through the BPF 36A to a desired signal level, in which

the gain may automatically by controlled to optimum so that its received power

may become as minimal possible as necessary depending on the distance from

the base station.).

Regarding claim 25, the apparatus of the combination of Yamashita and Uchida

discloses the method stated above. The combination does not disclose the processing

unit is configured to detect motion based on a signal in an automatic gain control loop is

found in the receiver. Watanabe discloses a CDMA receiver that includes the AGC

amplifier 37A in figure 1. The AGC amplifier is provided for amplifying the received

signal to a desired signal level, in which its gain may automatically be controlled to

optimum so that the received power may become as minimal as necessary depending

on the distance from the base station (paragraph 0066). Therefore, Watanabe discloses

the processing unit is configured to detect motion based on a signal in an AGC loop

(figure 1 and paragraph 0066: the AGC amplifier is provided for amplifying the received IF signal passing through the BPF 36A to a desired signal level, in which the gain may automatically by controlled to optimum so that its received power may become as minimal possible as necessary depending on the distance from the base station.). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the AGC amplifier of Watanabe into the receiver and method of the combination of Uchida and Yamashita. The receiver will increase the received signal level as the distance between the receiver and the base station increases so the signal can be received and processed correctly. This variable gain control will further minimize errors in the received signal (paragraph 0066).

Regarding claim 26, Watanabe discloses the processing unit is configured to detect motion as function of a statistic of the signal in the AGC loop **(figure 1 and paragraph 0066: the AGC amplifier is provided for amplifying the received IF signal passing through the BPF 36A to a desired signal level, in which the gain may automatically by controlled to optimum so that its received power may become as minimal possible as necessary depending on the distance from the base station.).**

Regarding claim 27, Watanabe discloses the statistic that is used is variance **(figure 1 and paragraph 0066: the AGC amplifier is provided for amplifying the received IF signal passing through the BPF 36A to a desired signal level, in which the gain may automatically by controlled to optimum so that its received power**

may become as minimal possible as necessary depending on the distance from

the base station.).

5.   Claims 8-10 and 28-30 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Nakamura et al (US 6,408,189) in view of Ramberg et al (US

2004/0258140).

Regarding claim 8, Nakamura discloses the method stated above. Nakamura

discloses the detecting is based on a phase error as stated in column 5, line 64 to

column 6, line 7 and shown in figure 2. Nakamura does not disclose the phase error is

based on a phase error signal produced by at least one of a delay lock loop, matched

filter, or correlator.

Ramberg discloses calculating phase errors using correlators the code phase

tracking is used to ensure that the receiver does not lose alignment with the signal as a

result of clock drift (paragraph 0056). The receiver uses the correlation outputs of the

early and late correlators associated with the on-phase correlators aligning to the

incoming signal during each symbol period to calculate a code phase error (paragraph

0056). The code phase error is used to update the clocking rate (paragraph 0057).

Therefore, Ramberg discloses the phase error is based on a phase error signal

produced by at least one of a delay lock loop, matched filter, or correlator **(paragraph**

0056: The receiver uses the correlation outputs of the early and late correlators

associated with the on-phase correlators aligning to the incoming signal during

each symbol period to calculate a code phase error).

It would have been obvious for one of ordinary skill in the art at the time of the

invention to provide this simple substitution of the phase error calculator of Ramberg for

the phase error detector of Nakamura since they operate in substantially the same

manner (calculating phase errors) and will yield the same result (phase errors).

Regarding claim 9, Nakamura discloses the detecting is a function of a statistic of

the phase error signal **(column 6, lines 1-7: the variance of the phase errors are**

used.).

Regarding claim 10, Nakamura discloses the statistic that is used is variance

(column 6, lines 1-7: the variance of the phase errors are used.).

Regarding claim 28, Nakamura discloses the apparatus stated above. Nakamura

discloses the detecting is based on a phase error as stated in column 5, line 64 to

column 6, line 7 and shown in figure 2. Nakamura does not disclose the phase error is

based on a phase error signal produced by at least one of a delay lock loop, matched

filter, or correlator.

Ramberg discloses calculating phase errors using correlators the code phase

tracking is used to ensure that the receiver does not lose alignment with the signal as a

result of clock drift (paragraph 0056). The receiver uses the correlation outputs of the

early and late correlators associated with the on-phase correlators aligning to the

incoming signal during each symbol period to calculate a code phase error (paragraph

0056). The code phase error is used to update the clocking rate (paragraph 0057).

Therefore, Ramberg discloses the phase error is based on a phase error signal produced by at least one of a delay lock loop, matched filter, or correlator **(paragraph 0056: The receiver uses the correlation outputs of the early and late correlators associated with the on-phase correlators aligning to the incoming signal during each symbol period to calculate a code phase error).**

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide this simple substitution of the phase error calculator of Ramberg for the phase error detector of Nakamura since they operate in substantially the same manner (calculating phase errors) and will yield the same result (phase errors).

Regarding claim 29, Nakamura discloses the detecting is a function of a statistic of the phase error signal **(column 6, lines 1-7: the variance of the phase errors are used.).**

Regarding claim 30, Nakamura discloses the statistic that is used is variance **(column 6, lines 1-7: the variance of the phase errors are used.).**

4.   Claims 11-13 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann JR. et al (US 2002/0126739) in view of Everitt et al (US 6,577,695).

Regarding claim 11, Tiedemann discloses the method stated above. Tiedemann discloses the metric is based on a frequency error but Tiedemann does not disclose the metric is based on a frequency error signal in a frequency control loop. Everitt discloses

an apparatus shown in figure 2 which detects a frequency difference between at least one reference signal and an output signal and generates a frequency error signal in response to the frequency difference (abstract). Claim 5 further discloses a frequency variance between the combination of the two reference signals and the PLL output signal defines a frequency variance range and the frequency error signal is recognized by the signal summing means when the frequency variance is beyond the frequency variance range. Therefore, Everitt discloses the metric **(the frequency error)** is based on a frequency error signal **(claim 5: a frequency variance between the combination of the two reference signals and the PLL output signal defines a frequency variance range and the frequency error signal is recognized by the signal summing means when the frequency variance is beyond the frequency variance range)** in a frequency control loop **(figure 2)**.

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide this simple substitution of the frequency error calculation of Everitt for the frequency error calculation of Tiedemann since the will operate in substantially the same manner (both calculate the frequency error) and will yield the same result (an frequency error value).

Regarding claim 12, Everitt discloses the detecting is a function of a statistic of the frequency error signal **(claim 5: a frequency variance between the combination of the two reference signals and the PLL output signal defines a frequency variance range and the frequency error signal is recognized by the signal**

summing means when the frequency variance is beyond the frequency variance

range).

Regarding claim 13, Everitt discloses the statistic that is used is variance **(claim**

5: a frequency variance between the combination of the two reference signals and

the PLL output signal defines a frequency variance range and the frequency error

signal is recognized by the signal summing means when the frequency variance

is beyond the frequency variance range).

Regarding claim 32, Tiedemann discloses the apparatus stated above.

Tiedemann discloses the metric is based on a frequency error but Tiedemann does not

disclose the metric is based on a frequency error signal in a frequency control loop.

Everitt discloses an apparatus shown in figure 2 which detects a frequency difference

between at least one reference signal and an output signal and generates a frequency

error signal in response to the frequency difference (abstract). Claim 5 further discloses

a frequency variance between the combination of the two reference signals and the PLL

output signal defines a frequency variance range and the frequency error signal is

recognized by the signal summing means when the frequency variance is beyond the

frequency variance range. Therefore, Everitt discloses the metric **(the frequency error)**

is based on a frequency error signal **(claim 5: a frequency variance between the**

combination of the two reference signals and the PLL output signal defines a

frequency variance range and the frequency error signal is recognized by the

signal summing means when the frequency variance is beyond the frequency

variance range) in a frequency control loop **(figure 2)**.

It would have been obvious for one of ordinary skill in the art at the time of the

invention to provide this simple substitution of the frequency error calculation of Everitt

for the frequency error calculation of Tiedemann since the will operate in substantially

the same manner (both calculate the frequency error) and will yield the same result (an

frequency error value).

Regarding claim 33, Everitt discloses the processing unit is configured to use

variance as the statistic **(claim 5: a frequency variance between the combination of**

the two reference signals and the PLL output signal defines a frequency variance

range and the frequency error signal is recognized by the signal summing means

when the frequency variance is beyond the frequency variance range).

Regarding claim 34, Everitt discloses the processing unit is configured to detect

motion using a comparison threshold level **(claim 5: a frequency variance between**

the combination of the two reference signals and the PLL output signal defines a

frequency variance range and the frequency error signal is recognized by the

signal summing means when the frequency variance is beyond the frequency

variance range).

4.   Claims 16, 17, 35 and 36 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Tiedemann JR. et al (US 2002/0126739) in view of Thomas (US

6,697,642).

Regarding claim 16, Tiedemann discloses the method stated above. Tiedemann
further discloses adjusting the gain as a function of the velocity of the mobile station and
the fading conditions (paragraph 0093). Tiedemann does not disclose the selecting the
parameter adjustment includes selecting the antenna mode, which comprises changing
from directive to omni-directional. Thomas discloses antenna controller 516 of control
circuitry 406 will initialize the antenna in an omni-directional mode may occur in
response to a sudden or catastrophic degradation on signal quality whilst the antenna is
operating in a narrow beam mode (column 10, lines 21-30). Therefore, Thomas
discloses the selecting the parameter adjustment includes selecting the antenna mode,
which comprises changing from directive to omni-directional **(column 10, lines 21-30:
antenna controller 516 of control circuitry 406 will initialize the antenna in an
omni-directional mode may occur in response to a sudden or catastrophic
degradation on signal quality whilst the antenna is operating in a narrow beam
mode).**

It would have been obvious for one of ordinary skill in the art at the time of the
invention to incorporate the antenna mode selection of Thomas into the method of
Tiedemann. The additional control of changing the antenna mode will allow the
communication system to operate in a sudden degradation of signal quality. This will
allow the system to function in a different mode until quality has improved, increasing
the efficiency of the communication system.

Regarding claim 17, Thomas discloses the selecting the parameter adjustment
includes selecting the antenna mode, which comprises changing from omni-directional

to directive **(column 10, lines 21-30: antenna controller 516 of control circuitry 406 will initialize the antenna in an omni-directional mode may occur in response to a sudden or catastrophic degradation on signal quality whilst the antenna is operating in a narrow beam mode. Once the sudden degradation has ended and signal quality has improved, narrow beam mode will resume.).**

Regarding claim 35, Tiedemann discloses the apparatus stated above. Tiedemann further discloses adjusting the gain as a function of the velocity of the mobile station and the fading conditions (paragraph 0093). Tiedemann does not disclose an antenna having a changeable antenna mode, wherein the compensator is configured to change the antenna mode. Thomas discloses antenna controller 516 of control circuitry 406 will initialize the antenna in an omni-directional mode may occur in response to a sudden or catastrophic degradation on signal quality whilst the antenna is operating in a narrow beam mode (column 10, lines 21-30). Therefore, Thomas discloses an antenna having a changeable antenna mode, wherein the compensator is configured to change the antenna mode **(column 10, lines 21-30: antenna controller 516 of control circuitry 406 will initialize the antenna in an omni-directional mode may occur in response to a sudden or catastrophic degradation on signal quality whilst the antenna is operating in a narrow beam mode).**

It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the antenna mode selection of Thomas into the apparatus of Tiedemann. The additional control of changing the antenna mode will allow the

communication system to operate in a sudden degradation of signal quality. This will

allow the system to function in a different mode until quality has improved, increasing

the efficiency of the communication system.

   Regarding claim 36, Thomas discloses the compensator is configured to change

the antenna mode between directive and omni- directional modes **(column 10, lines

21-30: antenna controller 516 of control circuitry 406 will initialize the antenna in

an omni-directional mode may occur in response to a sudden or catastrophic

degradation on signal quality whilst the antenna is operating in a narrow beam

mode. Once the sudden degradation has ended and signal quality has improved,

narrow beam mode will resume.).**

Conclusion

   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kevin M. Burd whose telephone number is (571)272-

3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David C. Payne can be reached on (571) 272-3024. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

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/Kevin M. Burd/
Primary Examiner, Art Unit 2632
11/20/2012